DOCUMENT RESUME

ED 470 151 IR 021 591

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TITLE	Action Research on Building Learning Communities in Cyberspace.
PUB DATE	2001-11-00
NOTE	7p.; In: Annual Proceedings of Selected Research and Development [and] Practice Papers Presented at the National Convention of the Association for Educational Communications and Technology (24th, Atlanta, GA, November 8-12, 2001). Volumes 1-2; see IR 021 504.
PUB TYPE	Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Action Research; *Computer Assisted Instruction; *Computer Mediated Communication; *Distance Education; Higher Education; Instructional Design; Nontraditional Education; *Student Reaction; *Teaching Methods; World Wide Web

ABSTRACT

The paper reports action research on Web-based courses conducted from 1999 to 2001. The expression "hybrid courses" is used in this paper to refer to the courses in which an instructor and students meet half or less than half of the regular scheduled meeting time, and such courses are the courses involved in this research. Participants of the study were the students in the 12 hybrid courses during the period 1999 to 2001. They were in-service teachers who were pursuing their Master's degree in Instructional Technology at the university and had little experience with hybrid courses. The goal of the research was to investigate students' opinions toward such courses and to examine the impact of using different strategies on online communities. Data collection relied on online discussion messages, observations, interviews, and surveys. Both quantitative and qualitative methods were utilized in this study. The results revealed that students and the instructor were in favor of Web-based courses and that the use of moderating strategies greatly influenced online communities. (Contains 10 references.) (Author/AEF)

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ED 470 151

Action Research on Building Learning Communities in Cyberspace

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Abstract

The paper reports action research on web-based courses conducted from 1999 to 2001. The goal of the research was to investigate students' opinions toward such courses and to examine the impact of using different strategies on online communities. Data collection relied on online discussion messages, observations, interviews, and surveys. Both quantitative and qualitative methods were utilized in this study. The results revealed that students and the instructor were in favor of web-based courses and that the use of moderating strategies greatly influenced online communities.

Introduction

"How many online (web-based) courses does your program offer?" "How often do I have to come to campus for my course work?" Such questions are now being asked much more frequent than ever before, and answers to such questions have become factors for learners to select their institutions and for institutions to attract their students. This fact is changing our society and shifting our educational paradigm. In response to the paradigm shift, many educators offer web-based courses. Some educators have high regards for such courses because they offer opportunities to people who cannot receive education otherwise due to large distance between home and school. Some view it as an alternative that provides learners with options of learning. Some even expect virtual classrooms to be the future of education. Meanwhile, other professionals doubt the value of such education and question its quality. Do students favor such courses? What are benefits and barriers of such a delivery format? How can we make such courses effective? To answer these questions, more research on this topic is needed.

"Online courses," "completely online courses," "web-based courses," "web supplement courses," "hybrid courses," and some other terminology are used by professionals. Some educators consider courses containing online features like synchronous or asynchronous communication to be online courses. According to this definition, courses in which instructors use these features but still meet students on a regular basis would be considered to be online courses. However, other educators disagree and only view courses in which instructors meet students half or less than half of the regular scheduled meeting time during a semester (quarter) to be online courses. Further, even other professionals only recognize courses in which instructors and students do not meet at all to be online courses. To avoid confusion, the author uses the expression "hybrid courses" in this article to refer to the courses in which an instructor and students meet half or less than half of the regular scheduled meeting time, and such courses are the courses involved in this research.

In this article, the author first introduces background that illustrates why the author conducted the research. She then describes her hybrid courses and strategies used in these courses in order to help readers understand the structures of the courses. After that, she reports the action research including data collection, data analysis, and results. Discussions and recommendations are also provided in this article.

Background

The author is associate professor of Instructional Technology at a state university in the United States of America. The majority of students in her study was in-service teachers and worked full time. They sometimes could not attend classes because of their responsibilities at schools, for examples, open house day, parents day, coach seasons, or because of their obligations to their families. When they came to class, they often were exhausted and hungry because they just rushed to the class straight from their schools, where they had been working for at least eight hours. They sometimes had to call home to check if their children were fine or had to leave classes early because nobody was taking care of his/her family. Observing all the demands that the students encountered, the author realized that these students were different from the students whom she had taught before. The ones she was teaching were reentry students or adult learners while the ones she had taught before were traditional full-time

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students. She wondered if a traditional classroom provided her reentry students with good learning conditions and if another educational delivery format would work better for them.

While she was pondering this issue, she received one of her university grant proposal calls, and this grant was designed to support faculty to convert traditional courses to online or hybrid courses. She applied for the grant with the intention to examine if such a delivery format would benefit her students. She received the grant in the spring of 1999, converted a graduate course to a hybrid course during the summer, and implemented it during the fall quarter of 1999. She received positive feedback from her students and continued teaching two additional hybrid graduate courses during 1999-2000. All these three courses were offered at two campuses and offered again during 2000-2001. During these two years, she collected data from her students and conducted research on online instruction. Her hybrid courses and the research are described below.

Instructional Design and the Hybrid Courses

As Grabowski (2001) stated, instructional design is closely connected to the beliefs of the course designer. Some instructors structure an online course as an independent study, and students receive credits as long as they complete course assignments. Accordingly, students could obtain credits at any time during the semester and have no interaction with other students of the course. On the other hand, some educators design an online course in a way that students have to participate in ample interactive activities with others, such as their classmates. Instructors using the former structure might view independent study, one of the four aspects of distance learning (Keegan, 1993), as an important aspect while educators using the latter one might consider interaction and communication to be essential.

The author of this article supported the latter when she designed her courses. She believed that social interaction plays an important role in learning (Vygotsky, 1978) and valued active learning and meaningful learning (Grabe & Grabe, 2001; Brown, 1992; Knapp & Glenn, 1996; Means et al., 1993). Agreeing with Palloff and Pratt (1999), she regarded an online community as crucial in a hybrid course and designed her courses in a way that her students had to interact with other students to enhance learning. Like Oliva (2000) and Santema & Genang (2000), she encouraged students' active learning and invited students to construct course materials together with her. She met her students four times throughout the quarter—at the beginning, in the middle, and at the end. All assignment submissions and discussions were conducted online via WebCT. She constructed a variety of forums (discussion boards) for students to communicate with each other and to share resources, for example, forums for making announcements, for asking questions and receiving help concerning technical issues, for submitting assignments, and for providing feedback and critiques to their classmates. In all her courses, students had to post their assignments to the forums, review assignments of their classmates, and critique each other's assignments. These activities provided students with basic channels for communication.

	1999-2000 (without moderating)	2000-2001 (with moderating)
F	Synchronous (Instructor posting topics)	Asynchronous (Medium-duty moderating)
W	Asynchronous (Student posting topics)	Asynchronous (Heavy-duty moderating)
S	Asynchronous	Asynchronous (Light-duty moderating)

Table 1. Different strategies used in the hybrid courses. F = Fall quarter, W = Winter quarter, S = Spring quarter

In addition to using assignments to enhance interaction, the instructor also employed different strategies to facilitate students' communication. Table 1 above shows strategies used in her hybrid courses. She used moderating strategies during the second year (2000-2001) while she did not use them during the first year (1999-2000). During the fall quarter of 1999, all students conducted synchronous communication every week and discussed topics that were posted by the instructor. During the winter quarter of 1999, students used forums to conduct threaded discussion about topics generated by their classmates. During both quarters, students obtained participation points based on frequency and quality of their posted messages. They were aware that they had to post at least two messages every week to receive participation credits. Such participation requirements were not expected during the spring quarter of 1999.

During the second year, the instructor used moderating strategies in the three hybrid courses in which students took turns to moderate their online community for a week. It was understood that the instructor would not jump in to answer questions unless it was necessary and that the students would receive credits based on how well they moderated the community. For example, if a question or a problem on a discussion board remained unanswered or not acted upon, the moderators of the week would be marked down. Moderators did not have to answer all questions or solve problems but they needed to facilitate discussions about the issues within the community.

Based on responsibilities and tasks the students conducted, the moderating strategies varied. The instructor categorized them into three types of moderating: medium-duty, heavy-duty, and light-duty. During the fall quarter while the medium-duty moderating was conducted, moderators posted discussion topics, hosted online discussions, and answered questions posted by their classmates. During the winter quarter while the heavy-duty moderating was conducted, moderators not only took on the same responsibilities as in the previous quarter but also assigned readings, generated rubrics, and further evaluated their classmates' online performance. During the spring quarter while the light-duty moderating was conducted, moderators only needed to host online discussion and answer questions posted by their classmates.

The Research Study

The goals of the research were to investigate students' opinions toward hybrid courses and to examine the impact of using different strategies on online communities.

Subjects

The participants of the study were the students in the twelve hybrid courses during 1999-2001. They were in-service teachers who were pursuing their Master's degree in Instructional Technology at the university and had little experience with hybrid courses.

Methodology

At the beginning of each course, the instructor explained to the students the course and their responsibilities, especially their duties related to the different strategies used in an online community. During the courses, the instructor posted questions for discussion. Examples of questions included (1) What are benefits and barriers of hybrid courses? (2) What are advantages and disadvantages of conducting synchronous and asynchronous communication in hybrid courses? (3) Do you like the moderating strategies used in this course? and so forth. During the last meeting of each course, students filled in a survey that contained 10 Likert scale (1-4) questions and open-ended questions. The Likert scale questions were guided to examine the following points: (1) Compared to a traditional class, did students feel that they learned as much as, or even more, in the hybrid course? (2) Compared to a traditional class, did students feel that they spent as much as, or even more, time preparing for the class? (3) Compared to a traditional class, did students feel that they were motivated as much as, or even more, to learn in this course? (4) While taking the course, did students have sufficient access to the instructor? (5) While taking the course, did students have sufficient interaction with other students in this course? (6) Given the choice between traditional courses and hybrid courses, did students prefer a hybrid course if the course content were suitable for a hybrid course? (7) Did students wish that more hybrid courses were offered in the Masters program at the university? (8) Would students enjoy taking another hybrid course? (9) Were students concerned about the quality of hybrid courses? (10) Did students like the delivery format? (11) How many sessions in which the teacher and the students meet would be appropriate for a hybrid course? Open-ended questions of the first year focused on benefits and barriers of hybrid courses while those of the second year emphasized the impact of moderating on online communities.

In addition to online messages and surveys, data was also collected from observations and interviews. The author observed students and activities online as well as during class meetings. Interviews were informal and occurred when there was a need for clarifying students' comments.

The author tabulated the survey data. She also downloaded students' messages related to the research, color-coded messages, and categorized them into appropriate folders based on the topics, for example, benefits of web-based courses and barrier of web-based courses.

Results and Discussions

The table below reports students' opinions toward the hybrid courses offered from 1999 to 2000. As mentioned above, the first course was funded by an internal grant and was used as a pilot to examine if the students preferred a hybrid course to a traditional one. The survey used in the first course was modified and improved for the upcoming quarters, which explains why some numbers in the table are missing.

First Year	Pilot (F)	2nd (W)	3rd (S)
Learn more	2.13	3.08	3.46
Spent more time	1.75	3.51	3.58
More motivated		3.30	3.52
Access to instructor	2.25	3.58	3.39
Interaction with students		3.06	3.22
Prefer a WB course	3.38	3.40	3.68
Wish for more WB courses in program	2.88	3.40	3.55
Enjoy taking another WB course	2.75	3.58	3.55
Concerned about quality of WB course		2.05	1.64
Like the delivery method	3.31	3.20	3.52

.F = Fall quarter, W = Winter quarter, S = Spring quarter

Table 2: Students' responses during 1999-2000. WB = Web-Based (hybrid) course

The results indicated that students were in favor of a hybrid course. The students felt that they learned as much as or even more in such course and that they were more motivated. They wished that more hybrid courses would be offered in the academic program, and they preferred a hybrid course to a traditional course.

Most of the means on table 2 went up when time progressed. The instructor felt that this fact was partially due to the experiences she and her students gained from the hybrid courses. She also felt that certain characteristics were necessary for people to succeed in such courses, for example, being self-disciplined. Since the students and the instructor did not meet every week, students had to be self-disciplined and be able to complete tasks without much supervision. More than half of the students revealed in their surveys and interviews that online learners should be self-disciplined and complete tasks on time. Four students who received incomplete during the first quarter pointed out a need of such characteristic. One of them said, "I have difficulty in the online [hybrid] course because I'm not so disciplined and often postpone my work. In a traditional course, I would be reminded every week when I go to class. But this is not the case for taking an online [hybrid] course."

Although people who tend to delay their work might have difficulty surviving in hybrid or online courses, the instructor believed that preparing students' mindset before they took such courses could be helpful. Therefore during the first meeting of her courses, she always asked students who had taken her hybrid course(s) before to share with other students tips of being online learners. "Don't postpone your work" was mentioned repeatedly by the students.

As mentioned earlier, students conducted synchronous communication in the first course and asynchronous communication in the second course. In both courses, students received participation credits. In the third class, asynchronous communication was utilized but no participation credit was issued. The different strategies used in these three classes had an impact on the online communities. The research results indicated that synchronous communication strengthened students' sense of belonging. A student stated, "Although we do not see each other every week, the real-time communication makes me feel we belong to the same class." Such a sense of belonging was less common when asynchronous communication was used during the second quarter. During that quarter, a few students addressed that they missed real-time communication and requested the instructor to sometimes conduct such communication while they were enjoying the flexibility that asynchronous communication provided. Observing the three courses, the instructor found that the online community of the third course seemed to be loose and thought that issuing no participation credits might have contributed to the loose community. The instructor suggests online instructors employ asynchronous communication and synchronous communication alternatively and use participation credits to motivate students participating in online communities.

Students listed several benefits of a hybrid course: flexible schedule, being able to work at any time and at any place, and being able to choose the best conditions for learning. They also mentioned that hybrid courses saved them gas and time on commuting and allowed them more access to instructor and to their fellow classmates.

Barriers also existed in a hybrid course. The participants missed face-to-face communication and personal contact. Students with low technology skills felt pressured and anxious. Such pressure and anxiety might create a negative impact on learning. Despite these barriers, students expressed that they would still choose a hybrid course over a traditional one if they had an option.

Like the students, the instructor enjoyed the flexibility hybrid courses provided and missed face-to-face contact with her students. Unlike the students, she experienced tremendous pressure of responding to students' messages and of their expectations of receiving responses instantly. Meeting students once a week in a traditional course became meeting students 24 hours a day, seven days a week online. In addition, it was time consuming and stressful to communicate with a couple of students who often got confused and repeatedly asked the same questions no matter how clear information was, for example, on when an assignment was due and when the next meeting would be. Such stress was eased during the second year when moderating was used in her courses.

During 2000-2001, the instructor utilized medium-duty moderating in the first (Fall) quarter, heavy-duty moderating in the second (Winter), and light-duty moderating in the third (Spring) quarter. As mentioned earlier, the differences among the three types of moderating were based on responsibilities and tasks students conducted in the hybrid courses. Data collected from survey open-ended questions, online discussions, observations, and interviews indicated that both the students and the instructor favored the use of moderating in the courses. The students felt sense of ownership of their online communities and learned from their peers by observing how their peers hosted the communities. They received answers much faster than before because every member of the communities tried to help answer questions. The instructor also favored the moderating. She noticed that she was less stressed responding to students compared to the first year and that the students received responses faster and became very active in the online communities. The communities became very dynamic, and she felt the courses sometimes could smoothly move forward like a car with a "cruise control".

Second Year	1st (F)	2nd (W)	3rd (S)
Learn more	3.73	3.15	3.46
Spent more time	3.90	3.93	3.73
More motivated	3.80	3.33	3.56
Access to instructor	3.83	3.62	3.43
Interaction with students	3.50	3.45	3.46
Prefer a WB course	3.81	3.42	3.73
Wish for more WB courses in program	3.85	3.63	3.63
Enjoy taking another WB course	3.72	3.66	3.70
WB providing better quality	3.70	3.45	3.70
Like the delivery method	3.70	3.27	3.66

F = Fall quarter, W = Winter quarter, S = Spring quarter

Table 3: Students' responses during 2000-2001. WB = Web-Based (hybrid) course.

Among the three different moderating strategies, the students favored the medium-duty moderating the most and the heavy-duty moderating the least. During the winter (heavy-duty) quarter, the responsibilities of the students and their activities appeared too complicated. Moderators of every week tried to do a good job by assigning readings, setting objectives for the week, and facilitating discussion; often their readings and objectives were too many to be accomplished within a week. Students conducted many different activities when time moved on. At the end, they were distracted by the objectives of different moderators and forgot the objectives of the course. In addition, moderators often had to participate in activities of a week while they were still evaluating their peers' online performance of the week when they were the moderators. This was indeed a hectic quarter, and the instructor learned a big lesson from the experience. Appropriate amount of online communication could enhance learning while too much communication might cause learners to withdraw from the community (Palloff and Pratt, 1999). Students' dislike of such moderating is clearly revealed in the table above. A number of the means during the winter quarter dropped and consistently appeared to be the lowest among the three courses. Students spent a lot of time (mean=3.93) on the course but did not necessarily learn more (mean=3.15). They liked the course the least (mean=3.27) compared to the other two courses of the year.

Although the Winter quarter was hectic, students still favored hybrid courses. Issues addressed during the first year, like benefits of such courses and their wish to have more hybrid courses in the program, repeatedly appeared in the second year. Students also liked the fact that they had to post their assignments and review their

peers' work. By doing so, they learned much from their peers. They liked meeting three to four times per quarter and did not seem to favor an online course without a face-to-face meeting.

A hybrid course did provide flexibility and convenience to learners, especially to learners at remote areas. While hybrid courses are blooming in many places, the author thinks that hybrid courses should not (1) be independent studies in which no interaction among students are necessary, (2) be only task-oriented in which social learning is neglected, and (3) lower the quality of education. Instead, the courses should be structured to raise the quality of education because learners have (1) options to choose their best learning conditions and (2) opportunities to enhance their learning using resources beyond boundaries of time and space.

Conclusion

The paper reports action research on online courses conducted from 1999 to 2001. Data were collected from three courses (12 course sections) at two campuses during the two years. Data collection replied on online discussions, observations, interviews and surveys. Both qualitative and quantitative research methods were used in this study.

The results indicated that students and the instructor were in favor of hybrid courses and that the use of different strategies had an impact on online communities. Using synchronous communication and asynchronous communication alternatively could enrich online communities, and moderating strategies with careful design and organization worked well in hybrid courses.

Instructors should employ a variety of strategies to build up and nurture an online community that may lead to a success of hybrid courses. This new delivery method provides students with options of choosing their best learning conditions and with opportunities to enhance their learning using resources beyond boundaries of time and space. One can see its potential and positive impact on our education and society.

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